

C O N V A I R  
A Division of General Dynamics Corporation  
(San Diego)

DESIGN INFORMATION BULLETIN

NO. 23.003

CONVAIR REPORT NO. ZM-22-005

PAGE: 1 of 2

MODEL 22

DATE: 3 October 1957

SKYDROL 500 HYDRAULIC SYSTEMS

- (1) The basic hydraulic system will be redesigned for Skydrol 500 hydraulic fluid, which is a fire-resistant phosphate-ester type manufactured by Monsanto Chemical Company of St. Louis, Missouri.
- (2) This fluid dissolves and softens many elastomers, plastics and organic finishes which are normally satisfactory for use with petroleum base materials, therefore all Engineering groups shall adjust their designs to accomodate the new material requirements.
- (3) The Standards Group (G. Waite) shall be the final authority for materials compatibility requirements.
- (4) The following information is provided as a general design guide:  
  
In the development of a satisfactory hydraulic system for use with Skydrol 500, three separate design concepts must be considered.
  - (a) Complete containment of the hydraulic fluid;
  - (b) Complete protection from deleterious effect of the hydraulic fluid through choice of materials;
  - (c) Acceptance of a limited amount of damage or deterioration from the occasional contact with hydraulic fluid.

General Application of These Concepts

1. Aircraft interior and exterior paint may be nominal except for Skydrol 500 protection inside the pod area. (These areas may need protection for MIL-I-7208 and will therefore usually meet requirements for protecting against Skydrol)
2. Seals on landing gear doors and the hydraulic compartment access door must be Skydrol 500 resistant. All other seals must be individually evaluated for materials compatibility with Skydrol 500.
3. All cushion clamps on all hydraulic lines shall be Skydrol 500 resistant.
4. Where shrouds are necessary they should be designed so that they will serve as drip pans during servicing of the hydraulic system and as containment media where leakage is likely.
5. Emergency pneumatic wheel brake system shall be considered a part of the hydraulic system in regard to Skydrol 500 resistance.
6. Markings in the hydraulic service center and markings elsewhere in the airplane but attached to hydraulic units shall be Skydrol resistant.
7. The design concepts above must be considered for all areas not specifically mentioned.

CONVAIR  
A Division of General Dynamics Corporation  
(San Diego)

DESIGN INFORMATION BULLETIN

NO. 23.003

CONVAIR REPORT NO. 4M-22-005

PAGE: 2 of 2

MODEL 22

DATE: 3 October 1957

SKYDROL 500 HYDRAULIC SYSTEMS

---

Prepared by

J. K. Williams  
J. K. Williams

Approved

G. A. Lemke  
G. A. Lemke  
Asst. Chief Design Engineer  
Mechanical & Propulsion

Approved by

L. O. Garday  
L. O. Garday  
Design Group Engineer  
Hydraulics

Approved

J. L. Wainwright  
J. L. Wainwright  
Asst. Chief Design Engineer  
Structures

Approved

T. H. Chadwick  
T. H. Chadwick  
Senior Design Group Engineer  
Hydraulics & Pneumatics

Approved

L. O. Cederwall  
L. O. Cederwall  
Asst. Chief Design Engineer  
Producibility

Approved

Howard Field  
Howard Field  
Design Specialist

Approved

P. D. Ferrara  
P. D. Ferrara  
Asst. Chief Design Engineer  
Equipment

Approved

A. J. Savard  
A. J. Savard  
B. J. Simons  
Model 22 Project Office